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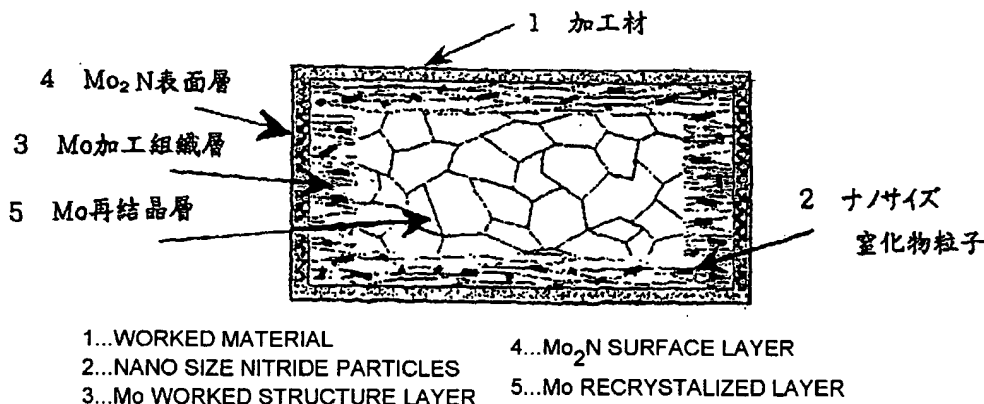
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(54) Title: NITRIDED Mo ALLOY WORKED MATERIAL HAVING HIGH CORROSION RESISTANCE, HIGH STRENGTH AND HIGH TOUGHNESS AND METHOD FOR PRODUCTION THEREOF

(54) 発明の名称: 高耐食性・高強度・高靱性窒化処理Mo合金加工材とその製造方法



(57) Abstract: A nitrided Mo alloy worked material having high corrosion resistance, high strength and high toughness, characterized in that it comprises a base Mo alloy worked material and, dispersed in the inside thereof, fine nitride particles having been formed by the nitriding of a metal element capable of forming a nitride present in the inside of the Mo alloy worked material and, formed on the surface thereof, a Mo nitride layer having been formed by the nitriding of a worked structure or a recovered structure on the surface; and a method for producing the nitrided Mo alloy worked material which comprises subjecting an alloy worked material containing Mo as a base phase and at least one of Ti, Zr, Hf, V, Nb and Ta as a solute of a solid solution to an internal nitriding with gradually elevating temperatures, and then subjecting the resultant product to an external nitriding. The nitrided Mo alloy worked material is novel and exhibits satisfactorily high corrosion resistance and a high strength under an ultra-severe conditions, such as in a boiled conc. sulfuric acid solution (for example, an aqueous 75 % H₂SO₄ solution at 180°C), and further, has a high strength at an elevated temperature and also a high toughness at a low temperature, which properties have never seen in the conventional materials.

(57) 要約: 沸騰濃硫酸溶液 (例: 75% H₂SO₄ 水溶液(180°C)) など超苛酷腐食条件下でも十分に高耐食性および高強度を示し、その上、高温においても高強度で、かつ低温でも高靱性を有するこれまでにない物性を合わせ持つ革新的材料とその効率的な製造方法の提供。 Mo合金加工材中に固溶した窒化物形成金属元素が内部窒化されて生成した微細窒化

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C23C8/24, C22C27/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01/18276 A1 (Japan Science and Technology Corp.), 15 March, 2001 (15.03.01), & KR 2040739 A & EP 1219722 A1	1-6
A	JP 59-208066 A (Toshiba Corp.), 26 November, 1984 (26.11.84), (Family: none)	1-6
A	JP 11-286770 A (Takashi YOSHIOKA), 19 October, 1999 (19.10.99), (Family: none)	1-6

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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Date of the actual completion of the international search
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